

**SYNONYMY OF *CURICTA HOWARDI* MONTANDON WITH
CURICTA SCORPIO STÅL (HETEROPTERA: NEPIDAE)**

The following synonymy of *Curicta howardi* Montandon with *C. scorio* Stål is abstracted from a systematic review of *Curicta* (Heteroptera: Nepidae) (Keffer, Ph.D. dissertation, 1991) that is currently being prepared for publication. A forthcoming review of the waterscorpion fauna of North America by Robert Sites and J. T. Polhemus requires the publication of the synonymy at this time.

Curicta scorio Stål

Curicta scorio Stål, 1862, Öfv. K. Svensk. Vet. Akad. Forh., 18(4):203. (1861).
Nepoidea montandoni Martin, 1898, Bull. Soc. ent. Fr., 4:68. Syn. by Champion, 1901:353.

Curicta howardi Montandon, 1910, Bull. Soc. rom Sti., 18(5,6):181-183, (1909).
NEW SYNONYMY.

Curicta drakei Hungerford, 1922, Kans. Univ. Sci. Bul., 14(18):432-433. Syn. by Kuitert, 1949, J. Kans. Entomol. Soc., 22(2):68.

In Montandon's original description of *C. howardi*, he offered five contrasting characters for *C. scorio* and *C. howardi* which can be summarized as follows (Montandon, 1910:183):

Character	<i>C. scorio</i>	<i>C. howardi</i>
1. Size	smaller	larger
2. Carina on vertex	no	yes
3. Scutellum carinate	no	yes
4. Pronotal sulci	shallower	deeper
5. Protibiae	dark at base only	darker throughout

The type for *C. scorio* measures 20.3 mm and the type for *C. howardi*, 19.5 mm so it is not clear why Montandon claimed a larger size for *C. howardi*. The protibial character is not diagnostic. All of the four types associated with this species have protibiae that are dark basally with a dark annulation somewhere in the proximal half. Further, protibial coloration is variable in previously identified *C. howardi* and *C. scorio* (301 non-type specimens were studied) and therefore does not follow the Montandon diagnosis. The other three characters, relating to carinae and sulci, are difficult to evaluate using the *C. scorio* type because much of the type's dorsum, including the head, pronotum, and scutellum, has been abraded or chemically treated, thus removing all the covering hair which contributes to sulci depth and carinae prominence. However, the raised cuticular patterns evident on this type indicate that a carina on the vertex and a raised, or carinate, trident pattern on the scutellum are both present. Further, I can see little difference between the pronotal sulci of the *C. howardi* and *C. scorio* types. There is variation in the depth of the median pronotal sulcus for non-type specimens in this species from deep to moderately deep, but the

variation is continual, found throughout the species' geographic range, and well within the range of variability found in this trait in other species of the genus (Keffer, 1991).

Only one character, the shape of the prosternum in lateral view, presents any difficulty concerning the synonymy of *C. howardi* with *scorpio*. In other species of *Curicta* the prosternum is either swollen in the distal half or not. However, in *C. scorpio* this character is not invariant but exhibits a continuum of form from swollen to declivent without swelling. The difficulty here is that there is some geographical clustering of these two extremes. South of Mexico all specimens examined have the swollen form. In Texas and Louisiana, the prosternum runs from subdeclivent with little posterior swelling to moderately swollen, with the former condition predominating. In Mexico both forms are present with much intermediacy. The types for *C. scorpio* (somewhere in Mexico) and *C. howardi* (Texas) have the swollen form (*C. howardi* less so than *C. scorpio*); the types for *N. montandoni* (Mexico) and *C. drakei* (Texas) are more declivent. I have tried in vain to use this character to delimit two or more species with these specimens. Because the variation is continuous it has been difficult to classify the prosternal shapes so that they might be mapped and studied for clinal variation. The best that can be said at this point is that the swollen form dominates in the south and the declivent in the north. (The absence of declivent forms south of Mexico may be an artifact of small sample size.) It could be that there are two species present in these specimens, corresponding to the two prosternal extremes, with a broad zone of sympatry between them in which hybridization has occurred. However, given that the specimens are equivalent in all other respects from Managua to New Orleans and that intermediate prosternal forms are pervasive and continuous, I have elected to synonymize *C. howardi* with *C. scorpio*.—S. L. Keffer, Department of Biology, James Madison University, Harrisonburg, Virginia 22801.

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